Proposed Rule 1420.2 Emission Standards for Lead from Metal Melting Facilities

Working Group Meeting #2

January 20, 2015

PR 1420.2 Approach

- Based on the structure of Rule 1420.1
- Incorporate a two tier approach based on process amounts
- PR 1420.2 establishes requirements for point and fugitive emissions
- Seeking input on approach, thresholds, and compliance dates

PR 1420.2 Framework

- Purpose
- Applicability the rule
- Definitions
- General Requirements
  - Ambient Air Lead Concentration Limit
  - Fence Line Ambient Air Monitoring
  - Total Enclosure
  - Point Source Emission Standards and Controls
  - Source Testing
  - Housekeeping
  - Compliance Plan
- Recordkeeping Requirements
- Reporting Requirements
- Exemptions

Purpose

- Protect public health by reducing exposure to lead emissions from metal melting operations
- Ensure attainment and maintenance of the lead NAAQS
- Fence line monitors needed to better understand ambient lead concentrations around affected facilities

Applicability

- Includes facilities with metal melting operations ~30 metal melting facilities
- Source category represents majority of reported lead emissions
- Developing threshold for applicability based on amount of lead melted annually (considering 100 tpy)
  - Concept for threshold consistent with Rule 1420
  - Threshold based on existing Rule 1420 recordkeeping requirements and new requirements set forth in this rule
  - Applies to lead melting in the form of pure lead ingots and lead containing metals

PR1420.2 Universe of Facilities

- Lead-acid battery manufacturers
- Aerospace part manufacturers
- Building material manufacturers
- Manufacturers of other lead products (solder, x-ray shields, fishing tackles)
- Scrap metal recyclers (secondary smelting)
- Alloying of aluminum and iron
- Steel mill
- Secondary lead smelters*
- Other?

* Excludes large lead-acid battery recyclers subject to 1420.1 (i.e., Exide and Quemetco)

General Requirements

- Ambient Air Lead Concentration Limit
- Fence Line Ambient Air Monitoring
- Total Enclosures
- Point Source Emission Standards and Controls
- Source Testing
- Housekeeping and Maintenance Activities
- Compliance Plan

Ambient Air Lead Concentration

- Limit ambient lead concentration to 0.150 $\mu g/m^3$ averaged over any 30 consecutive days
  - Lowering ambient concentration to 0.11 $\mu g/m^3$
  - Lower ambient concentration to 0.10 $\mu g/m^3$, with a feasibility study
- Compliance dates to be determined - considerations
  - Sufficient time to install pollution controls
  - Implement housekeeping and maintenance provisions
- If facility exceeds an ambient lead concentration 0.11 $\mu g/m^3$ must submit a Compliance Plan
  - Ensures can meet future lower ambient lead limit
  - Lower trigger for compliance plan consistent with ambient lead concentration limit

Ambient Lead Monitors

- Ambient monitors capture ambient lead concentration from all emission sources
  - Point sources (stack emissions)
  - Fugitive sources (operations and accumulated surface dust)
- Fence line monitors effective at providing ambient lead concentrations resulting from facilities

Monitoring Requirements for Ambient Lead Concentration

- Currently only one facility has fence line monitors
- Require all facilities to install fence line monitors
  - Phase-in facilities based on based on amount of lead melted, larger process amounts first
  - Manageable for SCAQMD staff (plan review)
- Off-ramp for fence line monitoring based on specific threshold

Monitoring Frequency

- Two tiered approach
- Facilities that melts more than 1,000 tpy of lead and/or exceed an ambient air lead concentration 0.11 $\mu g/m^3$ averaged over 30 days must conduct daily sampling
- All other facilities required to sample once every three days

Placement of Fence Line Ambient Air Monitors

- Multiple sampling sites required to accurately measure ambient lead concentration
  - Monitors must be placed where maximum ground level concentration expected
  - Minimum of three sampling sites approved by the Executive Officer
  - Executive Officer can require more monitors if needed
  - Capture upwind, downwind and background data
- Continuous record of wind speed and direction
- Backup, uninterruptible power supply

Total Enclosures Requirements

- Total enclosures minimize process fugitive emissions
- Two types of total enclosures
  - Enclosure with no negative air pressure requirement with requirements on openings
  - Enclosure with negative air pressure requirement also with requirements on openings
- Considering tiers for total enclosure requirement
  - Triggers can be either monitored ambient lead concentration or amount of lead melted

Point Source Lead Emission Rate

- Considering approaches for facility-wide lead point source emission limit
  - First approach – two steps
    - First step: 0.045 lb/hr
    - Second step: 0.023 lb/hr
  - Second approach – one step to 0.023 lb/hr
- Emission limits consistent with Rule 1420.1 (0.023 lb/hr is a proposed limit)
- Compliance dates to be determined
- Emissions rate determined on most recent source test conducted by facility or District

Emission Control Devices that Use Filter Media

- PTFE (filter bags for baghouses)
- Rated to achieve > 99.97% control efficiency for 0.3 micron particles (all other filter types)
- Alternative filter material that is equally or more effective for the control of lead emissions may be used upon approval by the Executive Officer

Source Testing Requirements

- Require source test of all lead point sources at least annually
- Submit a pre-test protocol to the Executive Officer for approval at least 60 calendar days prior to conducting a source test
- Notify the Executive Officer in writing one week prior to conducting any rule-required source test
- Source test shall be conducted while operating at a minimum of 80% of equipment permitted capacity

Housekeeping and Maintenance

- Objective is to reduce fugitive lead dust through more frequent and specified housekeeping and maintenance activities
- Implementation of housekeeping and maintenance requirements will reduce the accumulated lead containing dust
- Many of measures are based on Rule 1420.1

Housekeeping Requirements

- Pave or encapsulate all facility grounds where lead-containing materials are processed, transported, or stored
- Use a Rule 1186-compliant vacuum sweeper to clean all paved/encapsulated areas at least once per operating shift
- Periodically clean by wet wash or vacuum roof tops and all areas associated with the storage, handling, or processing of lead-containing materials
- Immediate clean-up, no later than one hour, of affected areas if events such as process upsets or maintenance activities result in the deposition of fugitive lead-dust

Housekeeping Requirements (continued)

- Store and transport all materials capable of generating any amount of sealed or leak-proof containers
  - When demonstrated to be infeasible may use alternative measures (e.g., application of wet suppressants) upon EO approval
- Remove weather caps installed on any lead-emitting stacks
- Place lead containing trash in covered containers
- Post signs at all entrances; truck loading and unloading areas indicating plant-wide speed limit of 5 mph

Maintenance Activities Requirements

- Conduct maintenance in negative air enclosure vented to a negative air machine fitted with filters rated at 99.97 capture efficiency
- Maintenance activity that cannot be conducted in a negative air enclosure must be conducted under the following conditions:
  - Partial enclosure (if feasible),
  - Using wet suppression or vacuum with filters
  - While collecting 24 hour sample
  - Immediately stopped if winds ≥ 25 mph

Maintenance Activities Requirements (continued)

- Wet wash or vacuum all lead contaminated equipment or materials used for maintenance activity
- Concrete or asphalt cutting or drilling performed outside of a total enclosure must occur under 100% wet conditions
- Grading of soils should only be performed on soils sufficiently wet to prevent fugitive dust

Compliance Plan

- Submit a compliance plan if 0.110 $\mu g/m^3$ averaged over any 30 consecutive days
- Lower trigger for compliance plan consistent with ambient lead concentration limit
- Compliance plan specifies additional control measures beyond the rule to ensure that the ambient lead limit is met
  - Additional total enclosures (buildings) vented to lead control devices – ensures high level of capture for process fugitive lead emissions
  - Enhanced housekeeping measures – Additional measures or more frequent
  - More stringent facility-wide lead emission rate limit
  - Additional point source controls - Multi-stage lead emissions control devices
  - Process changes and/or conditional curtailments - reduce process feed rates to reduce emissions until rule limits are met

Recordkeeping

- Daily records identifying process amounts of lead containing material
- Data and results for air monitoring activities
- Records of housekeeping activities
- Records of unplanned operational changes (e.g., unplanned shutdowns)
- Record retention requirements

Reporting

- Initial and ongoing (annual) facility status reports
- Monthly ambient air monitoring reports
- Exceedance of ambient lead concentration limit
- Considering notification requirements

Schedule

- Public Workshop – March 2015
- Set Hearing – May 8, 2015
- Board Hearing – June 5, 2015

Staff Contact: Eugene Kang
(909) 396-3524
ekang@aqmd.go

Dan Garcia
(909) 396-3304
dgarcia@aqmd.gov